Question 4: Pesticide Use Worksheets

Reference:
Applying Pesticides Correctly - A Guide for Private and Commercial Applicators
Unit 1: Principles of Pest Control, Pages 7 and 8

Biological Control

Biological control involves the use of natural enemies such as parasites, predators, and pathogens. Biological control is supplemented by releasing more of a pest's enemies into the target area or by introducing new enemies that were not in the area before. Biological control does not usually eradicate pests and the degree of control fluctuates significantly. There is a time lag between pest population increase and the corresponding increase in natural controls. Biological control also includes methods by which the pest is biologically altered, as in the production and release of large numbers of sterile males and the use of pheromones or juvenile hormones. Pheromones can be used to monitor pests by attracting pests to traps for population studies. Pheromones also control pests by attracting adult pests and preventing mating. Juvenile hormones can be used to reduce pest numbers by keeping immature pests from developing into adults and reproducing.

Cultural Control

Cultural control practices are used to reduce the numbers of pests. These practices alter the environment, the condition of the host, and/or the behavior of the pest to prevent or suppress an infestation. Cultural practices are altered to disrupt the normal relationship between the pest and the host and make the pest less likely to survive, grow, or reproduce. Common cultural practices include rotating crops, cultivating the soil, varying time of planting, fertilizing, mowing, timing of harvesting, planting trap crops, adjusting row width, altering plant height, pruning, thinning, and removing harborage.

Mechanical Control

Mechanical or physical controls are devices, machines, and other methods used to control pests or alter their environment. Traps, screens, barriers, fences, nets, radiation, and electricity sometimes can be used to prevent the spread of pests into an area. Lights, heat, and refrigeration can alter the environment enough to suppress or eradicate some pest populations. Altering the amount of water, including humidity, can control some pests, especially insects and disease agents.

Sanitation

Sanitation practices help to prevent and suppress some pests by removing the pests and their sources of food and shelter. Improving cleanliness, eliminating pest harborage, and increasing the frequency of garbage pickup can reduce pests. Livestock pests can be reduced by good manure management practices. Using pest free seeds or transplants and decontaminating equipment, animals, and other possible carriers prior to transport will assist in controlling pests. The proper design of food handling and waste handling areas can reduce access and shelter for many pests.

Chemical Control

Pesticides are chemicals used to destroy pests, control their activity, or prevent them from causing damage. Some pesticides either attract or repel pests. Chemicals that regulate plant growth or remove foliage also are classified as pesticides. Pesticides are generally the fastest way to control pests. In many instances, pesticides are the only means of effectively controlling pests in a timely manner.